

Program Planning Guide
Sustainability Technologies, Biofuels Certificate (C40370B)

Program Length: 2 semesters

Career Pathway Options: Associate in Applied Science in Sustainability Technologies

Program Sites: Chatham Main Campus

Suggested Course Schedule:	HOURS			Grade	Semester	Notes
	Class	Lab	Credit			
1st Semester (Fall)						
ALT 120	Renewable Energy Tech	2	2	3		
ALT 110	Biofuels I	3	0	3		
MNT 230	Pumps and Piping	1	3	2		
		6	5	8		
2nd Semester (Spring)						
ALT 210	Biofuels II	3	2	4		
ALT 211	Biofuels Analytics	2	4	4		
		5	6	8		

Total Semester Hours Credit: 16

Course Descriptions:

ALT 110 Biofuels I 3-0-3
This course is designed to provide an introduction to the fundamentals of biobased fuels. Emphasis is placed on proper handling and use guidelines, basic chemistry of biofuels, production methods, and the social, environmental, and economic impacts of biofuels. Upon completion, students should be able to demonstrate a general understanding of biofuels.

ALT 120 Renewable Energy Tech 2-2-3
This course provides an introduction to multiple technologies that allow for the production and/or conservation of energy from renewable sources. Topics will include hydroelectric, wind power, passive and active solar energy, tidal energy, appropriate building techniques, and energy conservation methods. Upon completion, students should be able to demonstrate an understanding of renewable energy production and its impact of humans and their environment.

ALT 210 Biofuels II 3-2-4
Prerequisite: ALT 110
This course provides an in-depth study of commercial biofuels production and various methods for manufacturing biofuels on a large scale. Topics include advanced production technologies, feedstock selection and pretreatment, quality control, energy balance, and biofuels business models. Upon completion, students should possess a practical knowledge of commercial biofuels production and facility operation.

ALT 211 Biofuels Analytics 2-4-4
Prerequisites: ALT 110
This course is designed to address quality control management during all phases of the biofuels production process. Topics include feedstock analysis, in-process quality monitoring, and standards compliance with national and international biofuels specifications. Upon completion, students should be able to demonstrate safe and accurate laboratory practices as well as an understanding of various quality control techniques.

MNT 230 Pumps and Piping Systems 1-3-2
This course covers pump installation and maintenance and related valves and piping systems. Topics include various types of pump systems and their associated valves, piping requirements, and other related topics. Upon completion, students should be able to select and install pump and piping systems and demonstrate proper maintenance and troubleshooting procedures.